CLAIMS

WHAT IS CLAIMED IS:

1. A method for efficient link recovery between first and second Fibre Channel ports communicating by the transport of GFP-encapsulated Fibre Channel client data frames across a SONET/SDH transport network, said first Fibre Channel port connected to said SONET/SDH transport network through a first transport interface and said second Fibre Channel port connected to said SONET/SDH transport network through a second transport, the method comprising:

detecting an interruption in said SONET/SDH transport network responsive to a GFP loss of synchronization; and

transmitting Ordered Sets indicative of non-operation from said first transport interface to said first Fibre Channel port so that said first Fibre Channel port performs link initialization and buffer credit recovery procedures with said second Fibre Channel port.

2. The method of claim 1 wherein said detecting step comprises polling GFP synchronization status.

3. The method of claim 2 wherein said detecting step comprises receiving a multibit error indication in CHEC bits.

4. The method of claim 2 wherein said polling step is performed periodically.

5. The method of claim 1 wherein said Ordered Sets comprise Fibre Channel Not Operational Ordered Sets.

6. The method of claim 1 further comprising:

determining that said SONET/SDH transport network has regained synchronization; and

subsequently terminating transmission of said Ordered Set signals.

7. The method of claim 6 further comprising:

waiting a predetermined amount of time before terminating transmission of said Ordered Set signals.

8. The method of claim 6 wherein said predetermined amount of time comprises 20 milliseconds.

9. In a network system for transporting GFP-encapsulated Fibre Channel frames across a SONET/SDH transport network between first and second Fibre Channel ports, said first Fibre Channel port connected to said SONET/SDH transport network through a first transport interface and said second Fibre Channel port connected to said SONET/SDH transport network through a second transport interface, said first transport interface comprising:

at least one integrated circuit adapted to detect an interruption in said SONET/SDH transport network responsive to GFP out of synchronization signals; and to transmit Ordered Sets indicative of non-operation to said first Fibre Channel port so that said first Fibre Channel port performs link initialization and buffer credit recovery procedures with said second Fibre Channel port.

10. The first transport interface of claim 9 wherein said at least one integrated circuit is adapted to receive a multibit error indication in CHEC bits to detect said interruption in said SONET/SDH transport network.

11. The first transport interface of claim 9 wherein said at least one integrated circuit is adapted to poll for GFP synchronization status to detect said interruption in said SONET/SDH transport network.

12. The first transport interface of claim 11 wherein said at least one integrated circuit is adapted to poll periodically.

13. The first transport interface of claim 9 wherein said Ordered Sets comprise Fibre Channel Not Operational Ordered Sets.

14. The first transport interface of claim 9 wherein said at least one integrated circuit is further adapted to determine that said SONET/SDH transport network has regained synchronization; and to subsequently terminate transmission of said NOS signals.

15. The first transport interface of claim 14 wherein said at least one integrated circuit is further adapted to wait a predetermined amount of time before terminating transmission of said NOS signals.

16. The first transport interface of claim 14 wherein said predetermined amount of time comprises 20 milliseconds.

17. In a network system for transporting GFP-encapsulated Fibre Channel frames across a SONET/SDH transport network between first and second Fibre Channel ports, said first Fibre Channel port connected to said SONET/SDH transport network through a first transport interface and said second Fibre Channel port connected to said SONET/SDH transport network through a second transport interface, said first transport interface comprising:

means for detecting an interruption in said SONET/SDH transport network responsive to GFP out of synchronization signals; and

means for transmitting Ordered Sets indicative of non-operation to said first Fibre Channel port so that said first Fibre Channel port performs link initialization and buffer credit recovery procedures with said second Fibre Channel port.

18. The first transport interface of claim 17 wherein said detecting means has means for receiving a multibit error indication in CHEC bits to detect said interruption in said SONET/SDH transport network.

19. The first transport interface of claim 17 wherein said detecting means has means for polling GFP synchronization status to detect said interruption in said SONET/SDH transport network.

20. The first transport interface of claim 19 wherein said polling means operates periodically.

21. The first transport interface of claim 17 wherein said Ordered Sets comprise Fibre Channel Not Operational Ordered Sets.

22. The first transport interface of claim 17 further comprising:

means for determining that said SONET/SDH transport network has regained synchronization; and

means for subsequently terminating transmission of said NOS signals.

23. The first transport interface of claim 22 wherein said subsequently terminating means waits a predetermined amount of time before terminating transmission of said NOS signals.

24. The first transport interface of claim 23 wherein said predetermined amount of time comprises 20 milliseconds.